# Employment insecurity of European individuals during the financial crisis: a multi-level approach

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# A multi-level approach

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## Abstract

The concept of Flexicurity has been receiving much attention as the European social model. One of the most important concepts within the flexicurity approach is employment security, the security of having secure and continuous employment career, which may entail changing employers and jobs. How do European individuals subjectively perceive their employment security? In addition, which individual characteristics can explain for feeling employment insecurity? Are there differences found across countries, and why is this the case? In this paper, we examine the various individual as well as national level characteristics that can explain individuals' perception of their employment security. To do this we use a multi-level model, where contextual effects are taken into account and individuals are considered to be embedded in countries. The data used for analysis is the 4th wave of the European Social Survey for 22 countries for the year 2008/2009. We find that various individual level characteristics such as demographic, human and social capital, as well as attitude variables explain why an individual feels employment insecure. At the country level, it seems that labour market and economic situations are more important than institutions in explaining the cross-national variance of employment insecurity perceptions.

## Keywords

Employment security, role of institutions, subjective perception, multilevel study, cross-European study

## Introduction

Flexicurity, the balance between flexibility and security, has been accepted by the European Commission (CEC: Commission of European Communities) as having the ability to enhance adaptability and competitiveness of the European markets while maintaining the European social model. Especially due to the recent financial crisis, and the consequences seen in the US and other liberal markets, a consensus is growing that the balance between flexibility and security is key for success in the future labour markets. From this growing attention, there is now an abundance of literature which examines and compares the flexibility and security of countries. Most of these studies have focused on national level institutional efforts in trying to enhance flexibility and security, or the cross-national variation of the state of flexibility and security aggregated to the national level (Chung & Wilthagen, 2008; see Viebrock & Clasen, 2009 for state of art on flexicurity). However, only few studies examine how individuals in these various flexicurity systems perceive their personal situations in regards to flexibility and security. Such perceptions are very important for the successful implementation of flexicurity policies, since individuals who do not feel secure may also be reluctant to accept an increase of flexibility in the labour market or changes in social security systems. In addition, job and employment insecurity has been shown to have dire consequences for one's mental and physical health (Ashford et al., 1989; Ferrie, 2001; Hellgren et al., 1999; Näswall & De Witte, 2003; Sverke & Hellgren, 2002b). For these reasons, it is important to understand which individuals in which labour markets are more susceptible to job and employment insecurities.

The key purpose of this paper is to examine the subjectively perceived employment security of European individuals. Employment security can be distinguished from job security in that although both entail the security of having a job, the former can be maintained while changing jobs. Due to the greater need for job flexibility and quicker adaptation of the labour market for increased competition, in the CEC's communication on flexicurity, it is stated clearly that "flexicurity focuses on employment security" (CEC, 2007: 7), and that , the flexicurity approach emphasizes the change in focus from job security towards employment security . Although there have been studies concerning the job insecurity of individuals, due to data limitations, up to now there has not been much investigation concerning the employment security of individuals. For this reason, it is unclear exactly which individuals perceive their employment statuses to be insecure. Are insecurity feelings related to characteristics of one's type of job and position in the labour market, are they related to one's human and social capital, and perhaps even to specific personal attitudes? Are such feelings influenced by characteristics of the working environment of people, like the size and sector of the firm they are working for? Moreover, from a policy perspective, the most important question is whether and to what degree insecurity perceptions are influenced by characteristics of the national context that people live in, regarding e.g. the state of the economy and the actual situation on the labour market, but also the policies that (aim to) affect employment flexibility and security.

So, the questions asked in this paper are as follows. How do European individuals subjectively perceive their employment security? What individual level

characteristics determine these perceptions? Do the perceptions differ between countries, and if so, what country characteristics, especially institutional and national flexicurity policies, determine cross-national differences?

The paper is structured as follows. In the second section, definitions of employment security, as well as the theories concerning the determinants of individual's perception of security are examined. Here we not only examine the individual level determinants but also national level determinants, especially focusing on the national level policy and institutions. In the third section, we examine the main data and methodologies used for this paper, namely the European Social Survey (ESS) data 2008/2009 edition, and multilevel modelling method. In the forth section we examine the analyses outcomes, and lastly in the final section, we come to the conclusions and policy implications.

## Definition and Theory

### Defining subjective employment security

In defining employment security, it is important to distinguish between job and employment security. In the definition of security given by Wilthagen and Tros (2004) as well as by the CEC (2007), job security is defined as the security of keeping a particular job or employment contract. On the other hand, employment security can be understood as (the potential of) having a secure and continuous employment career, which may entail changing employers and jobs (see CEC, 2007; Dasgupta, 2001; Pacelli et al., 2008). The difference between job and employment security is that the former focuses on keeping one's position with the current employer, whereas in the latter, the worker can be more mobile within the labour market. Thus a worker can still experience employment security when the chance of losing one's job is high, but the chances to find another position relatively quickly are also high.

Most studies in this field have focused specifically on job security. These studies can be distinguished into those which examine objective job security versus those which examine subjective job security. Within the subjective stream, scholars distinguish between cognitive and affective job security (Anderson & Pontusson, 2007; Ashford et al., 1989; Näswall & De Witte, 2003). The former refers to the individual's estimate of the probability that one will lose their job in the near future, whereas the latter refers to the fear, worry or anxiety of losing one's job[1]. In most cases, cognitive job insecurity is defined as the individually perceived possibility of losing one's job in the next 12 months, or a similar length of time. The problem with this definition is that it fails to filter out people who will lose their current job, but will find a new one in a relatively quick manner, through a quick transition period. We believe that there is a problem categorizing this group of people as insecure, for they will not go through a period where they are actually unemployed, and subsequently may go through a period of having no income or relying on unemployment benefits. Through the use of the concept of "cognitive employment insecurity", as we will do here, we can overcome this problem and examine those with "true insecurities", that is, those with the possibility of having a significant period of unemployment or job loss. This can be measured by asking whether the

individual believes that they will lose their job in the coming future (next 12 month or similar amount of time) and will not be able to find one in a relatively quick manner.

### Determinants of subjective employment insecurity

Due to the fact that until recently data sources measuring employment insecurity were lacking, there is no known study that examines the determinants of subjective employment insecurity of individuals. On the other hand, there are many studies that examine the subjective job insecurity of individuals. We will use them as a basis for developing a series of hypotheses about the determinants of employment insecurity.

Of the various papers that exist on job insecurity, we mainly focus on the outcomes of four articles. We choose these four due to that these are the few that are comparative by nature, and some include analyses of the impact of institutional factors in their analysis. Böckerman (2004) examines the determinants of (affective) job insecurity of individuals from EU-15 and Norway for the year 1998 using the Employment Options of the Future data. Näswall and DeWitte (2003) using their own data for Belgium, Italy, the Netherlands, and Sweden, for years around 1998-2000, also examine determinants of job insecurity. Both studies focus on individual level characteristics that impact job insecurity, but also take country differences into account. Anderson and Pontusson (Anderson & Pontusson, 2007) and Erlinghagen (Erlinghagen, 2008) are the only studies that, as we plan to do here, use a multi-level modelling approach to examine the determinants of (affective) job insecurity and the impact of institutions in comparison to labour market and economic situations. Anderson and Pontusson (Anderson & Pontusson, 2007) examine cognitive, affective as well as labour market insecurity across 15 OECD countries, using the ISSP (International Social Survey Programme), conducted during 1997. Erlinghagen (Erlinghagen, 2008) compares 17 European countries using the ESS (European Social Study) data for the years 2004/2005. The limitation to these studies is that the number of countries included is quite small, which limits the number of country level variables that could be included in the analyses.

For the purpose of this paper, we assume that the factors that influence job insecurity may impact employment insecurity as well. Of course, since employment security entails being able to find another job, it can be distinguished from job security and thus accordingly the determinants can be different. However, examining the theories and literature on job insecurity, we noticed that most are based on the presumption that job insecurity does not entail a loss of one's current job sec, but also that it will be followed by a period of unemployment. For this reason, the theories and studies of job insecurity may be relevant for the analysis of employment insecurity.

In the literature, cognitive job insecurity is affected by two different general factors. Firstly, it is affected by a person's objective job insecurity, or the actual possibility of losing one's job. This includes the individual's human capital, employability, influence over work, as well as the socio-economic situation of the individual's surrounding at the meso or macro level, thus company and country level. Secondly, it can be affected to a degree by a person's affective job insecurity. That is, those who fear job loss due to the repercussion it may have on their lives and their

family, or other reasons, may be more aware and more cautious in their assessment of the possibility of losing one's job. These two general factors comprise the variables that affect the perception of the individual, in terms of enhancing the awareness of the risk possibility, and in terms of enhancing how large the risk is due to consequences that come from the risk. Previous studies on cognitive job insecurity do include both factors of objective and affective job insecurity as determinants in their analyses. So, in the following we examine literature from both affective and cognitive job insecurity and objective job security studies, assuming that the variables that affect job insecurity may also affect employment insecurity. We divide the determinants into individual level characteristics, company level characteristics, and country level characteristics.

### Individual-level determinants

In this section we examine the various individual level determinants that may explain an individual's perceived cognitive employment insecurity, borrowing from theories and findings regarding the determinants of cognitive job insecurity. A distinction can then be made between four sets of factors: human capital indicators, current employment conditions, social capital indicators and relevant attitudes.

#### Individual-level determinants I: Human capital

#### Age

Age affects the employment security of individuals by affecting one's human capital as well as one's perception of one's own position in the labour market. Due to that employers may take seniority into account in workforce reduction, e.g., first in last out policies, older workers may be less vulnerable to job loss (Anderson & Pontusson, 2007; Sverke et al., 2006). On the other hand, older workers may experience more employment insecurity due to their low re-employability (Erlinghagen, 2008:2). In addition, age may affect one's perception of job security, due to the responsibilities individuals have in different ages (Sverke et al., 2006). For example, people in their 30s and 40s may experience possibility of job loss more negatively due to their responsibility to support their families and children (De Witte, 1999; Sverke et al., 2006). This would then make them fear the possibility of job loss than other age groups, which may enhance the negative perception of one's cognitive employment insecurity. Empirical analyses of these issues show mixed results. Many show that in fact older employees experience higher levels of job insecurity than younger workers (Böckerman, 2004; for affective andCampbell et al., 2007; Erlinghagen, 2008 for cognitive job insecurity; for example OECD, 1997a). Pacelli et al. (2008), however, find the opposite, where subjective job insecurity decreases with age, and the age group 20-24 has the highest job insecurity of all age groups. Näswall and De Witte (2003), in turn, find that older workers do feel more job insecurity (combination of cognitive and affective), however, this only holds true in some countries (Belgium and Italy), while not in others (the Netherlands and Sweden). Anderson and Pontusson (2007) find that age has a negative effect on individual's perception of how secure one's job is, but a positive effect on individual's perception of the probability of finding a new job. Overall, we tend to assume that the seniority

position of older workers is a most important factor in their perception of employment insecurity. Thus we come to the following hypothesis.

*H1: Older workers are less likely to perceive employment insecurity than younger workers.*

**Sex**

Sex is demographic factor that may have various implications for feelings of insecurity. Due to the generally lower human capital and weaker labour market position of women, and associated discrimination towards women, women may experience more objective job insecurity than men (Erlinghagen, 2008). On the other hand, men may feel more strain in the threat of losing one's job than women due to their traditional roles as breadwinners (Näswall & De Witte, 2003:194). However,, when women are the sole income earner of the household, they may experience a higher level of job insecurity (De Witte, 1999; Näswall & De Witte, 2003: 207). Empirically, studies show rather mixed conclusions. Kinnunen et al. (1999) and Rosenblatt et al. (1999) find that men perceive more job insecurity, but Böckerman (2004), Pacelli et al. (2008), and Erlinghagen (2008) all find no significant relationship between sex and perceived job insecurity. Näswall and De Witte (2003) find that only in Belgium women are more apt to feel insecure in their jobs, whereas in Italy, the Netherlands, and Sweden, they donot find a significant variance between sexes. In this paper, based on the disadvantaged position of women in the labour market, we expect women to be more employment insecure than men.

*H2: Women are more likely to perceive employment insecurity than men.*

**Skill and occupational level & Education**

Since blue collar workers may be more dependent on their income than white-collar workers and managers (Kinnunen et al., 1999), blue-collar workers may experience higher levels of perceived job insecurity than other workers (Näswall & De Witte, 2003; OECD, 1997b). On the other hand, Häusermann and Schwander (2009:17) find that socio-cultural professionals and capital accumulators, thus high-skilled groups in the free professions, are more worried about job insecurity in comparison to low-skilled groups. Especially the educational level of employees is seen as being important since it affects the opportunity workers have on the labour market: those with lower education, and lacking skill and knowledge will be more vulnerable in the labour market and thus have higher chances of experiencing employment insecurity (Böckerman, 2004; Erlinghagen, 2008). There is indeed much empirical evidence that workers with higher levels of education and qualification experience less job insecurity {Hartley, 1991 #245; Näswall & De Witte, 2003; OECD, 1997b; Pacelli et al., 2008; Schaufeli, 1992). In addition, Anderson and Pontusson (2007) find that not only do the higher educated workers tend to feel secure about their position, they also feel more confident about finding another job.

*H3: Workers with higher skill/education levels are less likely to perceive employment insecurity than workers with lower skill/education levels.*

In addition, previous education and training experiences are also important for an individual's human capital. This would especially be the case for individuals who have taken part in on the job training or training provided by the company. This may indicate how the individual is valued as an important resource within the company, as well as showing that the individual possesses company specific skills, which increases one's human capital values.

*H4: Workers with (recent) training experiences are less likely to perceive employment insecurity than workers without training experiences.*

**Previous employment experience**

Since earlier career interruptions, such as periods of unemployment, make labour market re-entry on a permanent basis more difficult (Gershuny & Hannan, ; Heckman & Borjas, 1980), due to the "deaccumulation of human capital" that arises from it (Böckerman, 2004:300), previous negative employment experiences may heighten job insecurity of individuals (Böckerman, 2004; Erlinghagen, 2008). Also, previous unemployment experience may be a sign of unobservable low productivity of the worker and low human capital (Böckerman, 2004). In addition, there are psychological impacts of having had unemployment experiences, where an unemployment experience makes the possibility seem more likely for the individual (Böckerman, 2004: 301). Böckerman {,2004#246; Kahneman et al., 1982) using European data, empirically shows that people who have had an unemployment experience in the last 5 years have a higher perception of job insecurity, but that this is not the case for women. Similar conclusions are drawn by Aaronson and Sullivan (1998) using data from the US, and Green et al. (2001) using data from UK. Erlinghagen (2008), using European data, distinguish between people who have had unemployment experience in the last 5 years, and those which had unemployment experience but not in the last 5 years. Both yield significant outcomes, and the former seems to have a stronger effect. Based on these outcomes we can expect that unemployment experience will increase an individual's employment insecurity, and the more recent the experience the higher the impact.

*H5: Workers who have (recently) experienced unemployment are more likely to perceive employment insecurity than workers who have not experienced a phase of unemployment.*

**Health conditions**

Since health is an important aspect of one's human capital (Becker, 2007; Schultz, 1962), one may expect that those in bad physical conditions may be more employment insecure than those who are in good conditions. Especially this may be true for those with some sort of long-term chronic illnesses or disabilities that may impair one's ability to work. Empirically there is evidence concerning the relationship between health and job insecurity (Erlinghagen, 2008 243). However, one should mind the direction of causality; since job insecurity may be seen to bring about negative effects one's physical as well as mental well being (Ashford et al., 1989; Ferrie, 2001; Hellgren et al., 1999; Näswall & De Witte, 2003; Sverke & Hellgren, 2002b). Here we assume that bad health negatively impacts on employment security.

*H6: Workers in bad health conditions are more likely to perceive employment insecurity.*

*H7: Workers with disabilities are more likely to perceive employment insecurity.*

**Migrant status**

Similarly, despite affirmative action policies and laws to stop discrimination of minorities, migrants and minorities are more disadvantaged in the labour market (de Beijl, 2000). Consequently, Clark and Postel-Vinay (Clark & Postel-Vinay, 2009) find that foreign born workers feel less secure than natives, but, this only for workers who work in private companies on permanent contracts.

*H8: Workers with a migrant status (from minority groups and/or those who are not citizens of the country) are more likely to perceive employment insecurity than other workers.*

**Individual-level determinants II: Current employment conditions**

Current employment conditions of the individual are in some ways a representation of the human capital an individual has. However, since these variables are very directly linked to the employment insecurity positions of individuals, we examine these variables separately.

**Contract type**

The most important individual level characteristics that may impact one's employment insecurity will be the type of employment contract one has. Thus individuals with temporary contract with a determined end would in most cases perceive their job as insecure. In addition, contingent workers may exhibit high levels of job insecurity due to that they are not as strongly attached to the organisation as permanent workers, and are more at risk of losing their jobs during reorganisations. In effect, many studies find that contingent workers, workers in temporary contracts, feel more insecure concerning the prospects of losing their job than permanent workers (Clark & Postel-Vinay, 2009; Erlinghagen, 2008; Näswall & De Witte, 2003; Sverke et al., 2000). However, Böckerman (2004) finds that temporary workers are less likely to fear losing their job (lower affective job insecurity), due to that they have already discounted the high probability of losing a job when they took up the contract (Böckerman, 2004: 302). Similarly, Rueda (2005:65) shows that insiders of the labour market, i.e., those with permanent position or voluntary part-time, temporary contracts, consider job security more important than outsiders, i.e., those with involuntary atypical contracts, or upscale groups, i.e., those with managerial positions. Since we are focusing on cognitive insecurities, we assume that workers on temporary contracts are more likely to perceive employment insecurity than those with permanent contracts.

*H9: Workers on temporary contracts are more likely to perceive employment insecurity than those with permanent contracts.*

**Part-time employees**

Näswall and De Witte (2003) argue that employees who work part time may also perceive their jobs to be more insecure due to several reasons. Firstly, due to that they may not feel that they are part of the organisation, as much as full-time workers. Secondly, due to that they are not the core workforce, thus may be the first to be downsized in turbulent times. Green et al. (2000) find that part-time workers perceive their job to be less secure than full-time workers, especially for the part-time workers in the low-wage occupations. However, Erlinghagen (2008) finds that part-time workers are less likely to perceive cognitive job insecurity when other individual characteristics are taken into consideration. Böckerman (2004) also finds the same result, although in his analysis it only holds for men. Näswall and De Witte (2003:208) find that working part-time only explains for the job insecurity of some countries while not others. They predict that the cross-national variance may have to do with the voluntariness of the contract. In other words, the effect of part-time work on perception of employment security is not really evident. We will test the following hypothesis:

*H10: Workers on part-time contracts are more likely to perceive employment insecurity than those with full-time contracts.*

**Influence over work**

When individuals are in a position where they have a certain level of influence on the activities of their work as well as company decisions, it is likely that they will feel less insecure over the possibility of losing their jobs. This is due to the fact that having influence may entail the perception of having some power over whether or not one will be laid off in uncertain times. In addition, the fact that an individual has influence over work entails that the individual is in a rather high position within the company, and this may reflect the human capital the person has. This will also impact the possibility of that individual of finding a new position when they are laid off.

*H11: Workers with large influence at work are less likely to perceive cognitive employment insecurity than those without any influence.*

**Overtime & long hours**

Overtime and working long hours could indicate a high demand for the goods and services provided by the firm and or by the specific worker, which indicates the stable need for that worker (Böckerman, 2004). In other words, long hours can be used as a proxy for the worker's value within the company, or the good economic condition the company is under. On the other hand, overtime may indicate that there was an adjustment of employees, and thus reflecting the uncertainty of the firm's current environment (Böckerman, 2004). Empirical evidence shows that overtime is positively correlated to the perceived job insecurity of an individual (Böckerman, 2004). Following the theoretical reasoning, we come to the following hypothesis.

*H12: Workers working overtime/long hours (48+) are less likely to perceive employment insecurity than those who are not working overtime/long hours.*

**Income security**

Erlinghagen notes how individuals who classify their household financial situation as bad also fear for job loss, even when other individual characteristics are taken into account (Erlinghagen, 2008: 193). He explains this relationship through the gravity of the circumstances for these individuals losing their job, thus through impacting affective job insecurity. Similarly, Anderson and Pontusson (2007:216) consider income pooling within households an economic support in case of job loss, thus a source of income security, which will impact job insecurity perception of individuals. Pacelli et al. (2008) also find a link between income security, measured as wages, and perceived job insecurity of individuals. They show that job insecurity feelings decrease when wages increase, however, within a specific wage group, men feel more insecure than women. In other words, they argue that since men's wages are usually higher than that of women, the relative wage level of when an individual feels more secure is higher for men than that of women. Our hypothesis will be:

*H13: Workers with income insecurity are more likely to perceive employment insecurity than those without.*

**Individual-level determinants III: Social capital**

We examine family structure and union membership as our main two social capital variables that impact one's employment insecurity.

**Family structures**

Different family structures may impact an individual's affective job insecurity thus having influences on cognitive insecurities. Firstly, having partners may decrease one's insecurities. This is due to that they may be less dependent on their own income from the buffer provided by their partners. Thus partners, especially with job and income, or are able to work, may act as a buffer against the experience of job insecurity during time when there is a perceived threat (Näswall & De Witte, 2003:194).

*H14: Workers with partners (who work) are less likely to perceive employment insecurity than those who do not have partners (who work).*

On the other hand, having family members can increase the fear of job loss. Erlinghagen (2008) argues that the significance of an individual's income for the family's livelihood is the relevant aspect here. Thus, workers with children or other dependents may experience higher levels of job insecurity due to their responsibility as providers (Erlinghagen, 2008; Näswall & De Witte, 2003:194). Despite these expectations, empirical research has shown that cohabitation and presence of children in the household do not seem to have any significant impact on perceived job insecurity of workers (Böckerman, 2004; Clark & Postel-Vinay, 2009; Erlinghagen, 2008) when controlled for other factors. From this, we come to the following hypothesis.

*H15: Workers with dependent family members (children) are not more likely to perceive employment insecurity than those who do not have dependent family members.*

**Member of trade union**

Some studies suggest that social support, such as trade unions, will diminish the experience of job insecurity (Armstrong-Stassen, 1993; Näswall & De Witte, 2003). Those involved with the union are more likely to benefit from positive support unions provide, especially due to that unions are there to support and provide voice for employees (Hartley et al., 1991; Näswall & De Witte, 2003; Sverke & Hellgren, 2002a) and provide protection against unfair dismissal and raise the cost of firing workers (Green et al., 2000: 871). On the other hand, job insecurity may encourage workers to join the trade union, thus resulting in union members having higher levels of job insecurity (Bender & Sloane, 1999; Näswall & De Witte, 2003 247). In addition, when we consider that in some countries unions may raise wages, and are concentrated among older industries; this may increase the risk of unemployment (Green et al., 2000). Empirically, Anderson and Pontusson (2007) find that being a trade union member decreases the feeling of one's job being insecure, however, increase labour market insecurity, the fear of not being able to find an acceptable job. Green et al. (2000) finds impact of trade unions to be "ambivalent" (ibid:871), thus finds no significant effects. For our analysis we will assume:

*H16: Workers who are members of the trade union are less likely to perceive employment insecurity than those who are not members.*

**Individual-level determinants IV: Attitude variables**

There are several attitude variables that may impact an individual's perception of employment insecurity.

**General trust**

One can expect that people who are generally worried about things may also show more insecurity concerning their jobs as well. Erlinghagen (2008) uses three individual attitude characteristics that are intended to represent basic character traits: the degree to which one is religious, the perceived importance of job security in work, and lastly, the trust they have in others. Of these only trust is shown to have significant results, and thus he concludes that "self-perceived job insecurity does seem to be a facet or symptom of a general lack of trust in other people." (Erlinghagen, 2008:193).

*H 17: Workers with low trust in people are more likely to perceive employment insecurity than those who have higher trust.*

**Perception of labour market and economic situations**

We assume that individuals who have a more negative view on the labour market and the economic situations are those who are more likely to fear job loss as well as having negative perception of finding a new position.

*H 18: Workers who have negative views on the current economic situation are more likely to perceive employment insecurity.*

*H 19: Workers who have negative views on the current unemployment situation are more likely to perceive employment insecurity.*

**Perception of standard of living of the unemployed**

Anderson and Pontusson argue that since affective job insecurity is a function of worries concerning the loss of income due to job loss, the level and duration of unemployment benefit schemes will affect workers job insecurity perceptions (Anderson & Pontusson, 2007: 216). In other words, individuals will fear unemployment more when they are unsure of their income security situation when unemployed. Later, when discussing the effects of institutional factors, we will return to this issue. Here we would like to argue that it is not only the actual protection offered by benefits, but also the perceptions workers have of the effectiveness of such protection. In other words, if they perceive the standard of living of unemployed people as rather bad, their perception of unemployment security may be negatively affected.

*H 20: Workers who have negative views on the standard of living of the unemployed are more likely to perceive employment insecurity.*

### Company level determinants

**Public companies**

Public companies may provide more job security to individuals due to that they are more likely to provide better employment conditions and less likely to be affected by market changes. Anderson and Pontusson (2007) do indeed find that workers in public companies feel more secure about their work in comparison to workers in private companies, although, they do not necessarily feel more confident about the prospects of finding new positions. This result is confirmed by Clark and Postel-Vinay (Clark & Postel-Vinay, 2009), where they find that public sector jobs are the most secure. In addition, they typically find that for workers in the public sector differences in national institutional arrangements as regards unemployment benefits and employment protection legislation (EPL) has no impact.

*H 21: Workers in public companies are less likely to perceive employment insecurity than those in private companies.*

**Size of companies**

Workers in large firms are less likely to experience job insecurity because of the importance of internal labour markets in such companies (Erlinghagen, 2008). In addition, small firms may not have a great resistance in period of economic difficulty, which increases job insecurity of the individuals employed in such firms. Empirically, Erlinghagen (2008) finds no significant results and Böckerman (2004) only finds significant negative results for the sub group of female workers. From this, we come

to the following hypothesis, however, we believe that controlling for other factors, this impact may be minimal.

*H 22: Workers in larger companies are less likely to perceive employment insecurity than those in smaller companies.*

**Sector**

Especially in an era of globalisation like ours is, workers employed in non-sheltered sectors may feel a stronger increase of insecurity, due to their exposure to global competition. In addition, workers in sectors that are subject to strong seasonal influences may feel more insecure concerning their jobs (Erlinghagen, 2008). Empirical evidence also confirms that sectoral differences can be found in the perception of job insecurity of workers, but, there is no strict divide between service and industry sectors (Erlinghagen, 2008; Green et al., 2000; OECD, 1997b). On the other hand, Böckerman (2004) finds that workers in the manufacturing industries are more likely to fear job insecurity. In this paper, we expect that there are sectoral differences in how workers perceive employment insecurity, but this need not depend on whether or not if it is a service sector or not.

*H 23: Workers perceive their employment insecurity differently depending on the sector in which they work.*

### Country level determinants

Lastly, there are national level characteristics that may impact how an individual perceive their employment insecurity. There has been a discussion concerning what types of institutions provide individuals with better security perceptions and many scholars have examined the issue empirically (Anderson & Pontusson, 2007; Clark & Postel-Vinay, 2009; OECD, 2004; Pacelli et al., 2008). Of all institutions, the impact of EPL (Employment Protection Legislation) and UB (Unemployment Benefit schemes) have especially been the focus of attention. The two may be functional equivalents in providing workers with labour security, one through labour market security and the other through income security (see alsoButi et al., 1998; Chung, 2003; Standing, 1999). . Thus, it is interesting to examine whether or not countries with different levels of EPL and UB impact individual's perception of employment insecurity.

On the other hand, a competing theory is that institutions actually have minimal impact in explaining how individuals perceive their employment insecurity, and it is rather the labour market and macro-economic situations that matter (Erlinghagen, 2008). In other words, individuals would be more sensitive towards the cyclical changes and conditions of markets, and this is what actually drives the cross-national differences found in individual's employment insecurity perceptions. In this section, we will examine these arguments and others about the cross-national variance in individual's employment insecurity perception.

## Country level determinants I: Institutions

### Unemployment Benefits and labour market policies

As mentioned in the previous section, unemployment benefit systems impact individuals since they will fear unemployment more when the repercussions of unemployment and prolonged job loss are (more) dire. However, generous unemployment benefit systems can impact individual's employment insecurity through other ways. Unemployment benefits encourages the unemployed worker to take up a job more suited to their specific skills set in the longer run, thus making their employment more sustainable (Yoo et al., 2003). Thus, in countries with generous unemployment benefits may decrease the likelihood of losing one's job, thus decreasing employment insecurity. Many scholars have empirically examined the suggested realtionships Clark and Postel-Vinay (2009) find that workers in private companies and with temporary contracts feel more secure in countries where unemployment benefit schemes are generous. The same result is found in a study by the OECD (2004) and Pacelli et al. (2008) where generous unemployment benefits are correlated positively with workers' perceptions of employment, job security. On the other hand, Erlinghagen (2008) shows that social security spending, having controlled for unemployment rates, GDP growth rates and EPL, does not have any significant effect on the perceived job insecurity of individuals. Based on the theory and empirical outcomes, for this analysis we assume:

*H 24: In countries with generous unemployment benefit systems, workers will be less likely to perceive employment insecurity.*

Active labour market policies (ALMP) are another aspect of flexicurity that has gained much focus, and is noted as being one of the key components of flexicurity (CEC, 2007). ALMPs are important in that they increase the employability of workers which will not only increase the re-employment chances of individuals, but decreasing their chances of being laid off. We can expect that in countries with extensive ALMPs, workers will feel more positive concerning re-employment and sustaining their current employment, especially if these policies have been effective and have increased the general employability of individuals.

*H 25: In countries with extensive active labour market policies, workers are less likely to perceive employment insecurity.*

### EPL

Employment Protection Legislation refers to the regulations that concern hiring and firing of workers both on permanent and on temporary contracts (OECD, 1999:50). The EPL indexes for regular workers concern the costs for employers of firing workers on regular contracts, while the EPL indexes for temporary workers refers to the regulations concerning hiring workers on temporary contracts. In most cases, EPL referred to in the previous literature and theory is the EPL for regular workers, thus the cost of firing permanent workers. The relationship between EPL and job insecurity is a tricky one. Stricter EPL can lead to longer unemployment durations (Nickell, 1997), and higher use of temporary contracts (Chung, 2005;

Dolado & Jimeno, 2002; OECD, 2004; Polavieja, 2006). However, their main role is in protecting workers from the risk of job loss, although this may only be valid for workers with permanent contracts. For this reason, Boeri et al. go on to say that "EPL concentrates the unemployment risk among outsiders" (Boeri et al., 2001:21). In other words, despite its role in protecting workers from dismissals, the impact EPL has on the total workforce may be negative in terms of employment insecurity. Thus, in the flexicurity theory, a combination of a generous unemployment benefit system with a relaxed employment protection system, especially for firing regular workers, may be the best way to secure all workers in the labour market, as in the Danish Model (CEC, 2006). However, we can expect that the impact of EPL differs depending on the type of EPL in question, and the worker in question. In other words, stringent EPL for regular workers may provide permanent workers with security, whereas make workers with temporary contracts insecure. On the other hand, stringent EPL for temporary workers, thus difficult hiring of temporary workers, may increase insecurity of both temporary and permanent workers, due to that it may make it more difficult for workers to find positions after being laid off.

Empirical analysis outcomes confirm this idea that EPL may be harmful to the job security of workers. OECD (2004), Böckerman (2004) and Pacelli et al. (2008) also show how countries with high EPL have lower average levels of perceived job security. Clark and Postel-Vinay (2009) show that especially workers in private companies or in temporary contracts feel less secure in countries where EPL is higher. Böckerman (2004) links this to the availability of (good quality) jobs in the countries with high EPL. On the other hand, Erlinghagen (2008), using a multilevel model for European countries, show that employment protection levels do not show any significant effects, when other macro level indicators are taken into account.

*H 26a: In countries with stringent employment protection legislation for firing regular workers, workers with temporary contracts are more likely to perceive employment insecurity.*

*H 26b: In countries with stringent employment protection legislation for firing regular workers, workers with permanent contracts are less likely to perceive employment insecurity.*

*H 26c: In countries with stringent employment protection legislation for hiring temporary workers, workers are more likely to perceive employment insecurity.*

**Country level variables II: Market situations**

**Labour market conditions**

Labour market conditions will impact the possibility of individuals' keeping their jobs, just due to the sheer number of positions available and jobs being dismissed. For this reason, countries where there is on average high unemployment rates, individuals are more likely to perceive employment insecurity. Similarly, those where employment rates are high, individuals are less likely to perceive employment insecurity. In addition to unemployment rate averages, changes in the employment and unemployment rate from the previous year are also important, especially when assessing the prospect of keeping one's current job or finding another one (Anderson & Pontusson, 2007:222). Empirically, Böckerman (2004) finds that perceived job

insecurity of individuals is positively correlated with the unemployment rates of the countries. Clark and Postel-Vinay (2009) use 5 year average local unemployment rate as the indicator of local labour market conditions, and show that it reduces the perceived job security of temporary workers, but increases it for permanent workers. Anderson and Pontusson (2007) find that unemployment rate changes impact both an individual's assessment of the possibility of losing one's position, as well as their assessment of the possibility of finding another position. Unemployment rate averages on the other hand, only impacted one's assessment of losing one's job. On the other hand, Green et al. (2000) found, for the case of Britain, that annual changes in the unemployment seem to have no effect on the perception of job insecurity of individuals. Whereas, they also find that both unemployment rate and annual changes of unemployment significantly increased the perception of individuals of having difficulties in finding a new job. Erlinghagen (2008) uses long-term unemployment rates of countries to control for the labour market situation of countries, which has significant negative impacts on the perceived job insecurity of individuals.

*H 27a: In countries with high unemployment rate averages workers are more likely to perceive employment insecurity.*

*H 27b: In countries with low employment rate averages workers are more likely to perceive employment insecurity.*

*H 27c: In countries where there have been an increase in unemployment rates from the previous year, workers are more likely to perceive employment insecurity.*

*H 27d: In countries where there is a high long-term unemployment rate, workers are more likely to perceive employment insecurity.*

**Economic conditions**

Other than labour market situations, general economic condition of the country may impact the employment security of individuals by affecting how individuals perceive their possibility of losing and finding jobs. Some studies use average GDP growth rates as a measure of economic situations of each country (for example Erlinghagen, 2008), although, empirically it did not yield any significant results. Despite such findings, economic condition is especially relevant in our study due to the time frame we are examining, which is during the financial crisis. In other words, there were large economic recessions across Europe during the time of the survey took place (late 2008- early2009), and this may have had a great impact on individuals perception of their securities. We examine the impact of the recession through the use of GDP growth rate for 2009. Although the crisis began during 2008, we see that the true indications of the financial crisis only unravelled through the GDP growth rates of the year 2009. For this reason, GDP growth rate for 2009 is used as a proxy to measure the severity of the impact of the global financial recession on the economic situation of the country.

*H 28a: In countries in bad economic situations, expressed here as low GDP growth rates averages, workers are more likely to perceive employment insecurity.*

*H 28b: In countries where the financial crisis hit the hardest, expressed here as GDP growth rate for year 2009, workers are more likely to perceive employment insecurity.*

## Data

### ESS 2008/2009

The data used for analysis is the 4th wave of the European Social Survey (ESS). This data set covers 31 European countries, EU 27 excluding Luxembourg and Italy, but including Turkey, Ukraine, Russia, Norway, Israel, and Switzerland for the year 2008/2009. We use this data set[2], for several reasons. Firstly, it one of the few data set which compares large number of countries that surveys the perceived employment security of individuals. Unlike the other previous surveys, where the perceived possibility of losing one's job is asked, the question also considers the possibility of obtaining another job in a quick manner. Secondly, this survey also include very important background variables, such as human capital characteristics as well as individual's job and company level characteristics, which are not available in other similar data sets. Lastly, this survey covers a very interesting year to examine employment insecurity, due to the impact of the financial crisis. Of these, we use cases from 22 countries, including Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, Great Britain, Greece, Hungary, Latvia, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Sweden, Slovenia, and Slovakia. We exclude Croatia, Switzerland, Israel, Russia, Turkey and Ukraine from the analysis due to lack of comparable contextual variables, as well as problems of comparability of situations due to that our interest is only in European welfare states. Since we are examining job/employment insecurity, we are only interested in those individuals currently in paid employment. For this reason, we drop cases where individuals are not in paid employment, as well as those who are above 65 years of age. We also exclude those who are currently unemployed and or in education. 54% of all respondents have answered that they have participated in paid employment (including self-employment and family businesses) in the past 7 days, resulting in 20,487 cases being available for our analyses. Later on in the analysis, we exclude extra country cases for some of the contextual variables (due to lack of data for EPL indexes). However, this will be noted in each section and analysis.

### The dependent variable

In this paper, we examine the perceived employment security of individuals. This is measured with the following question in the ESS. "How likely is it that during the next 12 months you will be unemployed and looking for work for at least four consecutive weeks?" (D47) The question enables us to distinguish between two groups. The first group consists of those who are not likely to be unemployed in the next 12 months, and those who are likely to unemployed **but** also likely to find another job in a relatively quickly manner, thus stay in gainful employment. This

group can be seen as having employment security, although the latter part of the group does not necessarily have job security. The second group consist of those who are likely to be unemployed **and** will not be able to find another one, thus those who are employment insecure. For reasons that the question is not divided into two questions, we cannot distinguish between those with job security, with those with no job security yet with employment security. In this paper, we consider those who have answered that it is very likely, and likely to lose one's job and not find one for 4 consecutive weeks, as those without employment security.

### Independent variables

See Appendix 1 for a detailed list of our independent variables at the level of individuals, company and country.

### The Model

In this paper, we run a two level random intercept multi-level regression models, where contextual effects are taken into account and individuals are considered to be nested in countries (Hox, 2002). Multilevel modelling is used when it is presumed that the individuals are subject to the influences of groupings (Rasbash et al., 2009), in this case, countries. In other words, through the use of a multi-level model we are presuming or testing to see whether individuals perceive their employment insecurity differently depending on which country they live in, even when all other factors that may influence an individual's employment insecurity have been controlled for. Here three models are examined. Firstly, we have an empty model, where we examine the amounts of variance of employment insecurity that can be attributed to the individual level and the country level. Secondly, we include the individual level variables into the model, which not only accounts for the within country variance, but also for composition differences between national populations (which form some part of the contextual variance). In this phase we run two models, one where all variables listed in our theory section are tested, and another where a shorter list of significant/meaningful variables is included. Thirdly, we include country level variables to explain for the country variance left after taking the composition effect into account. We will first include the country level variables separately, and then use a step-wise method to find a best fit model to explain for the variance between countries. We use both MLwin and STATA to derive our results.

## Outcomes

### Descriptive Analysis

Firstly, we examine the perceived employment insecurity of individuals across countries. As we can see from the Figure 1, in the period 2008/9 there are large variances in the way individuals in different countries perceive their employment insecurity, ranging from Norway with only 6 percent to Latvia where this percentage goes up to 68 percent. We can see that it is mostly the eastern European countries, namely, Latvia, Bulgaria, Estonia, Romania, Czech Republic, Hungary, and Poland

and southern European countries, namely, Greece, Spain, and Portugal, where individuals feel more insecure concerning their employment. In the Nordic countries, such as Norway, the Netherlands, Finland, Denmark, Sweden, along with UK and Germany, not many feel insecure concerning their employment.

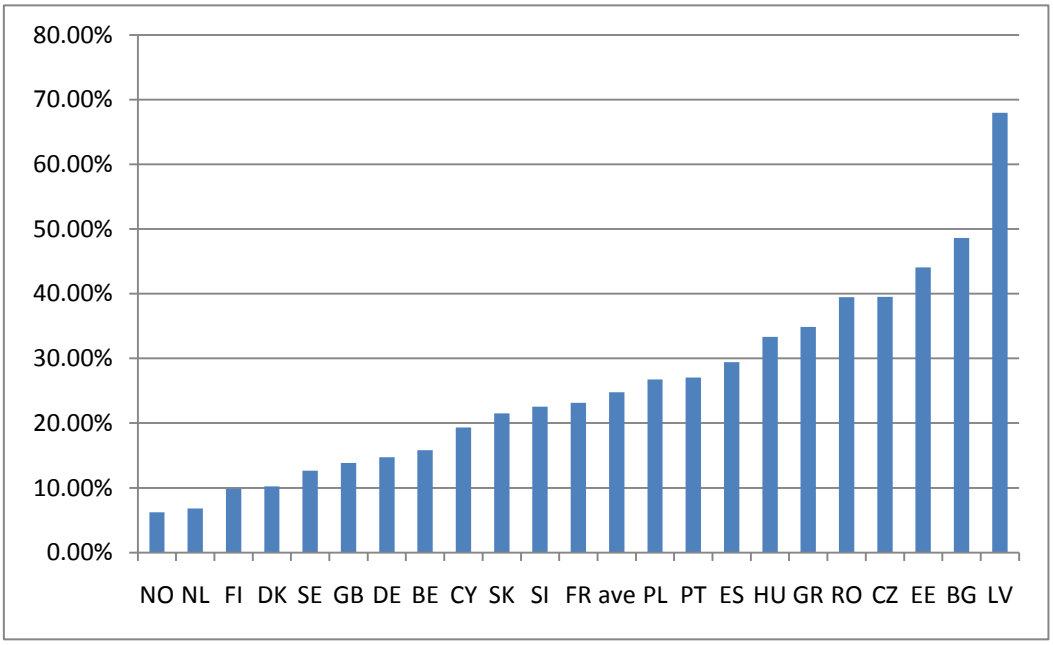


**Figure 1:** Cross-national variance in the percentage of individuals subjectively perceiving employment insecurity (%) across Europe for 2008/2009

### Empty model

Now we examine the extent to which the variance of the employment insecurity can be attributed to the country level.

We see from the table 1, that 18% of the total variance in individuals employment insecurity can be attributed to the country level, which confirms somewhat the result found in Figure 1. This is quite a large variance attributed at the country level, but it does not take any compositional effects into consideration. A part of the country level variance could be due to differences in the composition of the national populations. Our analysis of the effects of individual level variables in the next section will control for composition effects

| | For Model 1 of table 2 | | For Model 2 of table 2 | |
|---|---|---|---|---|
| | B | std. error | B | std. error |
| constant | -1.229 | 0.180 | -1.218 | 0.178 |
| con(var) | 0.706 | 0.216 | 0.690 | 0.211 |
| Level 1 variance | 3.287 ($\pi 2/3$) | | 3.287 ($\pi 2/3$) | |
| | N level 1=16793<br>N level 2=22, ICC=17.7% | | N level 1= 17936<br>N level 2 = 22, ICC = 17.4% | |

**Table 1. Empty model**

#### Multi-variate multi-level analysis 1: individual level variables

In our multi-variate analysis examining the individual level variables, we derive two models. One, Model 1, where all variables are included that were mentioned in the theory, to test our hypotheses listed, and another, Model 2, with a smaller list of variables, which we can use for our multi-level analysis. For the concise Model 2, we include the key control variables age and sex, and variables that have been shown to be significant in the Model 1. In Model 2 we also exclude the attitude variables, because they can be directly linked to the country level variables that we want to test. On the other hand, we include some key company level variables even when they do not necessarily have significant impact due to the theoretical reasoning behind the importance of these variables. The results of the analysis are as follows.

As we can see from Table 2, the demographic characteristics of age and sex seem not to have an impact on the perceived employment insecurity of individuals in Model 1, although when restricting the amount of control variables included, Model2, we find some significant results. Workers between the ages 50 to 64 seem to be more secure than workers of other age groups. This confirms our hypothesis 1 where we predicted that older workers are less likely be employment insecure than younger workers. Although we see that this relationship is only significant for the workers over 50 in comparison to the rest of the group, what we can see from Model 2, is that the coefficient of the various age groups indicate that employment insecurity decrease with age. In addition, we see that women are more likely to perceive employment insecurity, and this relationship becomes significant in Model2. This also confirms our hypothesis, that women either due to human capital issues, or due to the differences in attitudes, are more likely to perceive employment insecurity. The reason that this relationship becomes significant in the second model, with restricted number of variables, may be because the first model controls for attitudes of individuals.

| Employment insecurity | | Model 1 | | Model 2 | |
|---|---|---|---|---|---|
| | | B | Std.error | B | Std.error |
| Constant | | **-0.605** | 0.212 | 0.259 | 0.207 |
| **Human capital** | | | | | |
| Age *(ref: 30 to 39)* | 15 to 29 | 0.064 | 0.073 | 0.064 | 0.062 |
| | 40 to 49 | -0.065 | 0.064 | -0.072 | 0.056 |
| | 50 to 64 | -0.029 | 0.068 | **-0.145** | 0.058 |
| Female *(ref: male)* | | 0.017 | 0.053 | **0.137** | 0.045 |
| Education *(ref: secondary)* | basic low | -0.005 | 0.110 | 0.070 | 0.090 |
| | tertiary | **-0.160** | 0.060 | **-0.381** | 0.052 |
| Training in past 12 months | | **-0.183** | 0.054 | **-0.232** | 0.047 |
| Unemployment experience | | **0.382** | 0.062 | | |
| Unemployment exp. within 5yr | | **0.538** | 0.078 | **0.993** | 0.053 |
| Bad health | | 0.219 | 0.145 | | |
| Disability | | *0.132* | 0.070 | **0.395** | 0.058 |
| Citizen | | **-0.560** | 0.122 | **-0.597** | 0.094 |
| Minority | | 0.127 | 0.108 | | |
| Discriminated | | *0.165* | 0.093 | | |
| **Current employment condition** | | | | | |
| Permanent contract | | **-0.759** | 0.057 | **-0.695** | 0.049 |
| Part time | | 0.053 | 0.064 | | |
| Influence over work: | none | **0.331** | 0.057 | **0.424** | 0.048 |
| *(ref: medium influence)* | complete | **-0.694** | 0.090 | **-0.777** | 0.076 |
| Over time | | 0.022 | 0.056 | | |
| Long hours | | **-0.172** | 0.068 | **-0.116** | 0.051 |
| Income insecurity | | **1.816** | 0.054 | | |
| Current income insufficient | | 0.087 | 0.060 | | |
| **Social capital** | | | | | |
| Partner | | -0.115 | 0.079 | | |
| Partner in paid work | | **0.159** | 0.072 | **-0.100** | 0.044 |
| Child | | *-0.105* | 0.055 | -0.022 | 0.046 |
| Currently union member | | **-0.219** | 0.066 | **-0.180** | 0.058 |
| **Attitudes** | | | | | |
| Low trust in people | | -0.002 | 0.063 | | |
| Low satisfaction in economy | | **0.252** | 0.055 | | |
| perceived unemployment rate of country | | *0.015* | 0.009 | | |
| perceived standard of living of unemployed | | -0.004 | 0.013 | | |

| | | | | | |
|---|---|---|---|---|---|
| **Company level characteristics** | | | | | |
| Public company | | -0.076 | 0.086 | -0.100 | 0.076 |
| Firm size *(ref: less than 10)* | 10 to 24 | 0.030 | 0.069 | 0.042 | 0.059 |
| | 25 to 99 | 0.044 | 0.069 | 0.044 | 0.059 |
| | 100 to 499 | 0.027 | 0.081 | 0.029 | 0.070 |
| | 500 or more | -0.123 | 0.098 | -0.112 | 0.086 |
| Sector | Agriculture | **-0.666** | 0.141 | **-0.523** | 0.118 |
| *(ref: Manufacturing)* | Mining | **-0.890** | 0.386 | **-0.883** | 0.330 |
| | Electricity | **-0.853** | 0.254 | **-0.727** | 0.210 |
| | Construction | 0.031 | 0.095 | -0.038 | 0.082 |
| | Retail & repair | **-0.335** | 0.084 | **-0.339** | 0.071 |
| | Hotel & restaurants | **-0.352** | 0.122 | **-0.308** | 0.102 |
| | Transport | **-0.260** | 0.104 | **-0.248** | 0.090 |
| | Financial intermediation | **-0.386** | 0.152 | **-0.547** | 0.134 |
| | Real estate | **-0.278** | 0.096 | **-0.375** | 0.084 |
| | Public administration | **-0.874** | 0.131 | **-0.846** | 0.113 |
| | Education | **-0.622** | 0.127 | **-0.600** | 0.110 |
| | Health & social work | **-0.686** | 0.112 | **-0.643** | 0.098 |
| | Other services | **-0.527** | 0.114 | **-0.427** | 0.096 |
| Level 2 variance | | **0.309** | 0.098 | **0.590** | 0.182 |
| Explained variance at level 2 | | **R2** | 56.3% | **R2** | 14.5% |
| level 1 variance | | 3.29 | π2/3 | 3.29 | π2/3 |
| Nlevel1 | | 15917 | | 17936 | |
| Nlevel2 | | 22 | | 22 | |

**Table 2:** Individual level determinants of employment insecurity of individuals across 22 European countries for years 2008/2009 (multi-level random intercept model)

*Bold = significant at the 95% level, italic = significant at the 90% level*

Many of the human capital variables are shown to have a significant impact on the employment insecurity of individuals. Firstly, those with tertiary education seem to be more employment secure than those with secondary or basic level of education. In addition, those who have taken some sort of courses or training in the past 12 months also seem to be more secure. This shows how the impact of training and education is important in individual's employment security, and confirms our hypothesis 3 and 4. Our 5$^{th}$ hypothesis predicted that phase of unemployment impact's individuals perceived employment insecurity. Results show that, indeed the experience of having been unemployed seems to have very strong negative impact on employment security of individuals. Especially when this experience has been rather

recent, within the past five years, than the impact is even stronger. Those with disability seem to be less secure about their employment than those without, especially when the list of variables included is restricted. This confirms our hypothesis 7. However, subjective perception on one's health does not have any impact, especially when other factors, including whether or not the individual has a disability or illness, is taken into account. Citizens of the country feel much more positive about the employment security, and those who are included in a minority or discriminated group feel less secure, confirming our hypothesis number 8. However, the latter two variables are not statistically significant when other variables are controlled for.

Of the various employment characteristics, as hypothesized in hypothesis 9, those with permanent contracts are more likely to feel employment security. For hypothesis 10 on the other hand, where we predicted that part-time workers are less likely to perceive employment security, the direction of the relationship seems to be correct, although it is not statistically significant. Those who have answered that they feel to have complete influence over the decisions of the company are those who are more likely to perceive employment security. On the other hand, those with no influence are more likely to feel employment insecure, confirming our hypothesis 11. This impact is even stronger when the list of variables controlled for, are reduced. Although those who work over time do not differ in their employment insecurity perception from those who do not do so, those who work long hours, that is, more than 48 hours a week on a normal basis, feel that they are less employment insecure (confirming hypothesis 12). This result probably could be interpreted as those with longer working hours are those who are more likely to have certain necessary skills in the company, or that they are employed in companies with high demand, thus are in good economic situations. Those who fear that they will not be able to sustain a level of income for necessities of the family in the future, are also those who believe their employment situations to be insecure (confirming hypothesis 13). Also, the individuals who believe that their current income is insufficient are those who are likely to perceive employment insecurity, although this relationship is not statistically significant. This could be because individuals who are in economically insecure position, thus the lower income groups, are more insecure about their jobs, or because they fear job loss more than others due to that the consequences of it will be more dire. It could also entail that those with rather gloomy future projections - about their income - are those who also fear for their employment security. However, this could also be due to a reverse causality, where individuals with less employment security fear that they will not be able to sustain a level of income security, due to that they project a future job loss. In addition, since income security perceptions can be influenced by institutional factors, such as passive labour market policies, we exclude this variable in the model that examines country level variables.

Examining social capital variables, we see that having a partner decreases the likelihood of perceiving employment insecurity, although this impact is not statistically significant. Contradicting our hypothesis, in Model 1 we see a positive sign for having partners in paid work are being likely to be employment insecure. However, in combination with the negative impact of having a partner, we expect that the overall impact of having a partner in paid work is insignificant. When restricting the number of variables included in the model, we see that having a

partner in paid work decreases an individual's perception of employment insecurity, as hypothesized in hypothesis 14. The relationship could have changed due to the differences in the variables controlled in Model1 and Model 2, specifically, since Model 2 does not include the general partner dummy, as well as income insecurity and attitude variables. Thus we expect the negative impact found in Model 2 is changed to a positive one due to the income insecurity and attitude variables taken into account. Thus, having a partner in paid work generally decreases your employment insecurity perception, however, when you are income insecure with negative views on the market, this impact is insignificant.

Although with weak statistical significance, having a child decreases one's chances of perceiving employment insecure, which contradicts our hypothesis 15. This result could be due to a reverse causality, where individuals with a certain level of employment security can and decide to have children, and those in insecure positions cannot do so. This could also mean that the fact that an individual has a child/children could indicate indirectly an individual's human capital as well. We see that this effect is even insignificant in Model 2. Being a trade union member decreases the likelihood of perceiving employment insecurity, confirming our hypothesis 16.

Of the attitude variables, we see that the perception one has on economic situations, and to a lower extent the perception of current labour market situation, are the only variables which have statistically significant influences on the employment insecurity perception of individuals. Those who are not satisfied with the current economic situation, thus those with a gloomy projection of the economic situations of their country, are those who perceive their own employment also to be insecure confirming hypothesis 18. Similarly, those who perceive that there is a high unemployment rate in the country are those who are likely to feel employment insecure, confirming our hypothesis 19. Trust in people and the perceived standard of living of the unemployed are not statistically significant in explaining employment insecurity perception (rejecting hypotheses 17 and 20). We exclude these all attitude variables from our Model2, which will be used as a basis to examine the impact of country variables. The reason behind this is that perception of the current economy and labour market situations, and perception of state of living of the unemployed are correlated to the actual state, and institutions shaping these issues. Including these variables may hide the impact of the country level variables that influence employment insecurity perceptions of individuals. For the trust variable, we exclude it for reasons that the impact is found to be insignificant.

Of the company level characteristics, both the size of the company and being employed in a public company do not impact the individual's employment insecurity perception (rejecting hypotheses 21 and 22). However, we can see that individuals in different lines of businesses have different assessments of their employment insecurity. Workers employed in manufacturing sectors and construction sectors are those who are most likely to perceive employment insecurity. This is followed by transport and real estate sectors. Workers in public administration are those who are least likely to perceive their employment to be insecure, and this is followed by workers in electricity, and mining sectors. The sectors with less employment security seem to reflect what was happening due to the impact of the financial crisis, because the rather sheltered sectors perceiving employment insecurity not as much as the

open sectors. However, it is not so clear when we see that financial intermediation sector seems to be about on average concerning employment insecurity.

Lastly, if we examine the decrease in the level 2 variance due to the inclusion of the individual level variables, we see that approximately 56% of the variance has been explained in Model 1. In other words, of the variance between countries approximately half can be explained by composition effects, thus due to the fact that each country is composed of different types of individuals who may be more prone to employment insecurity. On the other hand, when we exclude attitude variables as well as some of the insignificant variables, as done in Model 2, only 15% of the level 2 variance can be explained by individual variables. This is most likely to be due to the fact that some of the excluded variables such as income security and attitudes are driven by country characteristics.

### Multi-variate multi-level analysis 2: Contextual explanations

In this section, we explain the variance left across countries, having controlled for various compositional effect, in the level of employment insecurity of European individuals. Firstly, we examine the impact of the national level variables separately.

Table 3 shows the results of the multi-variate, multi-level random intercept model where country level variables are included one by one separately. Here we see that in countries where there are generous unemployment benefits, expressed here as PLMP expenditure as a percentage of GDP divided by the unemployment rate, are the countries where individuals are less likely to perceive employment insecurity. This confirms our hypothesis 24. In addition, countries with extensive ALMP measures, expressed here as the ALMP expenditure as a percentage of GDP divided by the unemployment rate, are also the countries where individuals are less likely to perceive employment insecurity. This confirms our hypothesis 25. Examining the impacts of employment protection legislation, we see that none of the EPL indexes explain much of the variance found in the cross-national variance of employment insecurity. One impact we do find is the interaction of EPL for regular workers and permanent contracts, which is a positive significant relationship. What this means is that permanent workers are on average less likely to perceive employment insecurity than workers with temporary contract or no contracts, as shown in the results in table 2. However, in countries where the regulation for firing regular workers are strict, the impact of having a permanent contract is not as strong, thus the gap between contingent workers and permanent workers decrease. This is opposite our hypotheses 26a and 26b, where in combination, it was predicted that the stronger the EPL for regular workers, the larger the gap between workers of temporary contracts and permanent contracts in their perceived employment insecurity. However, this may have to do with the fact that EPL for regular workers increase the number of temporary workers (see theory section). It may be due to that when there are large amount of temporary workers in the labour force, the gap between the employment insecurity between temporary and permanent contract holders decrease, due to the possibility of being in one or the either contract type increases.

For the labour market variables, we see that both unemployment rate and employment rates impact the individual's employment insecurity perception. As stated in hypothesis 27a and 27d, countries with high unemployment and long-term

unemployment rate averages in the past 5 years, are those where individuals are more insecure about the employment. Similarly, when the country has had high employment rates in the past 5 years, individuals are less insecure, as hypothesised in hypothesis 27b. The changes in unemployment rate increase an individual's insecurity perception however, it does not seem be statistically significant. Economic situations also make a difference in how individuals perceive their employment insecurity. We see that GDP growth rate for 2009, thus the countries that were hit harder from the financial recession are those where individuals are more likely to perceive employment insecurity, confirming our hypothesis 28b. On the other hand, strangely enough, the countries with on average high GDP growth rates are those where individuals are more likely perceive employment insecurity. This contradicts our hypothesis, 28a, but this may be due to other characteristics of the country which may be correlated with GDP growth rate averages, such as employment rate averages of long-term unemployment rate averages (See Annex).

| | B | Std.err | R2 (from model 2 in table 2) |
|---|---|---|---|
| PLMP expenditure/unemployment rate | **-4.060** | 0.975 | 44.2 |
| ALMP expenditure/unemployment rate | **-6.695** | 1.890 | 35.4 |
| EPL overall | 0.281 | 0.304 | 2.5 |
| EPL for regular workers | 0.189 | 0.255 | 3.1 |
| EPL for temporary workers | 0.129 | 0.153 | 1.4 |
| (in one model) EPL regular*permanent | **0.183** | 0.082 | 2.5 |
| EPL regular | 0.073 | 0.261 | |
| Unemployment rate average | *0.094* | 0.061 | 2.1 |
| Employment rate average | **-0.073** | 0.024 | 19.1 |
| Change in unemployment rate 2007-2008 | 0.133 | 0.144 | 7.7 |
| Long-term unemployment rate average | *0.129* | 0.074 | 4.1 |
| GDP growth rate average | **0.252** | 0.087 | 27.4 |
| GDP growth rate for 2009 | **-0.114** | 0.032 | 43.1 |

**Table 3:** Explaining employment insecurity of individual across 22 European countries, through various country level characteristics separately (each row represents one model, and all models control for all individual level variables as shown in Table 2 not shown here) – MLWin models

*Bold = significant at the 95% level, italic = significant at the 90% level*

*N level 1=17936 and N level 2=22, with the exception of when EPL indexes are included than N level1=15508 and N level 2 =18*

To understand the true impacts of the variables better, we must control for other country characteristics. We do that by including more country variables that were of significant relevance (both statistically and theoretically) in a number of models. The results are shown in Table 4. Note that employment rate and unemployment rate are

not taken in together due to their high inter-correlation. In addition, we use ALMP and PLMP averages as a percentage of GDP and not these figures divided by unemployment rates, as done in Table 3. This is due to the fact that unemployment, employment rates are already controlled for in the models.

In model 3 and 4, we include the LMP and EPL indexes along with labour market and economic market indexes. We see that labour market policy indexes lose their significance when they are included in the model with labour economic market variables. On the other hand, the interaction term of EPL for regular workers and permanent contract is still positively significant. In other words, even when controlling for labour market policies and socio-economic situations, the higher cost of firing regular workers decreases the employment insecurity gap felt between workers with permanent and temporary/no contracts. Model 3 and 4, including the labour market institutions and economic and labour market situations explain around 55% and 68% of the variance left respectively, after controlling for individual level variables.

Since including EPL indexes make us lose cases from 4 countries because of unavailability of data, we also derive models without EPL indexes included. Both model 5 and 6 shows us that when we control for economic and labour market situations both ALMP and PLMP do not have any significant impacts. On the other hand, labour market situations (unemployment and employment rates) as well as impact of the economic crisis (GDP growth rate for 2009), are statistically significant in explaining the variance found in employment insecurity of individuals across country. Model 5 explains 67% of the left variance from model 2 in table 2, and Model 6 explains 78% of the left variance. Examining the model where labour market institutions are excluded from the model, Models 7 and 8, the explained variance is still rather high, especially Model 8, where only employment rate averages and GDP growth rate for 2009 is included.

One can say that this result, of the importance of market situations over institutions, can be explained by the fact that the period in which the survey took place (fall of 2008 to early 2009), is a very specific year where the economic crisis took precedence over all other aspects of societies. However, when we compare this result to the results from previous studies in job insecurity, a similar conclusion is made. For example, Erlinghagen (2008) using the same survey but for the years 2004/5, also come to the conclusions that it is rather the market situations and not institutions that explain the cross-national differences in the insecurities individuals perceive. Anderson and Pontusson (2007) also finds significant impacts of labour market situations rather than active labour market policies on cognitive job insecurity, although in their study EPL was also found to have significant impacts. However, their study is restricted to only 15 countries, and does not include variables to examine economic situations in their models. In other words, the result found in this paper, that labour market and especially economic situation of the country are important factors in explaining variance of employment insecurity across countries, seem to be influenced somewhat by the period under investigation. However, reflecting back to the previous studies on similar issues, the conclusion is not period specific and provides insights for other periods as well.

| Employment | Model3 | | Model 4 | | Model 5 | | Model6 | | Model 7 | | Model 8 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| insecurity | B | Std.err | B | Std.err | B | Std.err | B | Std.err | B | Std.err | B | Std.err |
| ALMP exp as a % of GDP | -0.250 | 0.618 | 0.284 | 0.559 | -0.019 | 0.547 | 0.329 | 0.470 | | | | |
| PLMP exp as a % of GDP | -0.236 | 0.295 | -0.327 | 0.251 | -0.402 | 0.270 | -0.360 | 0.225 | | | | |
| EPL for regular workers | 0.012 | 0.196 | 0.097 | 0.168 | | | | | | | | |
| EPLreg*permanent | **0.185** | 0.087 | **0.188** | 0.087 | | | | | | | | |
| Unemployment rate average | **0.102** | 0.042 | | | **0.114** | 0.038 | | | **0.127** | 0.044 | | |
| Employment rate average | | | **-0.068** | 0.017 | | | **-0.070** | 0.015 | | | **-0.077** | 0.014 |
| GDP growth rate for 2009 | **-0.076** | 0.039 | **-0.090** | 0.033 | **-0.110** | 0.027 | **-0.118** | 0.022 | **-0.132** | 0.030 | **-0.128** | 0.023 |
| variance level 2 | **0.173** | 0.062 | **0.121** | 0.044 | **0.193** | 0.061 | **0.132** | 0.043 | **0.249** | 0.078 | **0.156** | 0.050 |
| R2 (from model2)[a] | 54.5% | | 68.3% | | 67.4% | | 77.7% | | 54.5% | | 73.5% | |
| N level 2 | 18 | | 18 | | 22 | | 22 | | 22 | | 22 | |
| N level 1 | 15508 | | 15508 | | 17936 | | 17936 | | 17936 | | 17936 | |

**Table 4**: Explaining employment insecurity of individual across 18/22 European countries, through various country level characteristics in combination (controlled for all individual level variables as shown in Table 2 not shown here)

*Bold = significant at the 95% level, italic = significant at the 90% level*

*a : the base model for comparison for the models with EPL indexes have been derived separately. Can be provided upon request.*

One thing to note here is that in all models examined, the model where employment rate averages are used explain for more of the variance across countries than unemployment rate averages. In addition, the impact of ALMP albeit not statistically significant in both cases, has a positive relationship with employment insecurity when employment rate averages are included in the model (see Model 4 and 6). It is unclear why this would be the case, but it is likely to do with the high correlation between the two variables (see Annex 3).

Latvia has a very high percentage of people who perceive employment insecurity, as well as being the extreme case of GDP growth rate for 2009 (see Annex 2). Thus one could suspect that the results concerning GDP rates are solely driven by the cases from Latvia. However, having tested the model excluding Latvia, the conclusions do not change and the direction of the models as well as the high significance of GDP growth rate for 2009 does not change significantly.

## Conclusions

Despite the fact that employment insecurity is becoming more important in the field of policy and research, there have not been many studies on how individuals perceive their employment insecurity situations. This paper examines how European individuals perceive their employment insecurity across 22 European countries, and investigate what types of individual and country level characteristics can explain for the variance found. We find that various individual level variables, such as demographic, human capital, social capital, as well as attitude variables are highly significant in explaining the differences between individuals in how they perceive their employment insecurity. In addition, we see that when including the various individual variables mentioned, the model explain up to more than half of the variance found across countries in the level of employment insecurity. In other words, the difference across countries in their composition of individuals is a major factor in explaining the differences across countries in the average employment insecurity perceptions. We also investigate the impact of institutions and market situations in the perception of individual's employment insecurity. We find that although some institutional variables such as active and passive labour market policies do seem to explain the level of individual's employment insecurity somewhat, when other context variables are taken into account, they lose their significance. It is rather the economic and labour market situations of the country that explain why an individual feels insecure. Although this result could be influenced by the time period under investigation, comparing the results from previous studies, this seems unlikely.

However, we are not ruling out the significance institutions may have in protecting individuals from feeling insecure. Institutions shape the employment rate as well as economic situations of the countries, and we find that there are high correlations between both ALMP, PLMP expenditures with employment and unemployment rates. More importantly it will impact the human capital and other individual level characteristics of the company. For example, active labour market policy activities are directly linked to training experience of individuals, which has a strong significant impact on how insecure individuals feel. However, in the context

of the financial crisis, and the group of countries examined here, the most important factor is the how bad the crisis is/was and what the labour market situation of the country is in.

There are still some questions that need to be addressed. For example, the result we find for the relationship between employment protection legislation and the gap of perceived employment insecurity between permanent and temporary workers needs further investigations. It seems likely that there may be cross-national differences in the gap between how workers in the two different contracts perceive their employment insecurity. Our question would then be, what types of institutions or labour market factors drive this result. Secondly, there are some additional country level variables need to be tested. One interesting institution will be the impact of mobility indicators. In other words, how individuals perceive their employment insecurity in countries where the labour market is mobile, in both terms from unemployment to employment but also from temporary to permanent positions. Lastly, to examine the real impact of the financial crisis, we would need to compare the result from a non-crisis year, but not with job insecurity indicators, which have been done in previous studies, but with employment insecurity indicators.

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[1] A third concept is "labour market security", which concerns the individual's perception of their probability of finding another job with more or less equivalent characteristics (Anderson & Pontusson, 2007: 214-215). In this paper we will not further refer to this very specific form of security.

[2] Due to the timing of the analysis, we use the third edition of the data set, which only include 28 countries.

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# Appendix

## Appendix 1: Independent variables

### a. Individual level characteristics

**Human capital variables**

- Age – 4 categories (15-29, 30-39, 40-49, 50-64)
- Sex – female dummy
- Previous education – lower, secondary, tertiary
- Training received in the past year
- Previous unemployment experience – ever had an unemployment experience of 3month or more, had an experience in the past five years
- Bad health condition – subjective condition as bad
- Disability – daily life hampered by illness or disability
- Migrant – citizen of the country, belong to an ethnic minority, perceive oneself as a part of any discriminated group

**Current employment status**

- Permanent contract
- Part time worker
- Influence over work - having complete or no influence over decision in organisation
- overtime – having worked longer than one's contracted hours
- long hours – having worked longer than 48 hours per week
- income insecurity – likelihood of not having enough for necessities in the future
- current income - feeling about family's income nowadays

**Social capital and other characteristics**

- Having a partner
- Having a partner in paid work
- Having dependent child(ren)
- member of trade union – currently union member

**Attitude variables**

- Trust - general trust towards people
- Satisfaction towards current economy
- Perception of unemployment rate of country
- Perception of state of living of the unemployed in the country

### b. Company characteristics

- sector – public private
- size of company - under 10, 10 to 24, 25 to 99, 100 to 499, 500or more
- sector – NACE 13 – agriculture forestry and fishing, mining and quarrying, manufacturing, electricity gas and water, construction, retail and repair, hotel and restaurants, transport storage and communication, financial intermediation, real estate renting and business activities, public administration and defence, education, health and social work, other services

### c. National level determinants [1]

**National institutions**

- National expenditure on passive labour market policy average for four years(2004-2007) (EUROSTAT)
- National expenditure on active labour market policy average for four years(2004-2007) (EUROSTAT)
- EPL index for 2008 (OECD) – for regular workers
- EPL index for 2008 (OECD) – for temporary workers

***Labour market and economic conditions (all data from EUROSTAT)***

- Unemployment rate average five years 2004-2008
- Employment rate average five years 2004-2008
- Change in unemployment rate for 2007-2008
- GDP growth rate average for 2004-2008
- GDP growth rate for 2009

[1] Averages are made for years when data was available (thus years where many countries did not have data, these years were excluded)

## Appendix 2: country level variables

| country | EPLreg | EPLtemp | ALMPave | PLMPave | almpunemp | plmpunemp | empave | unempave | unempchange | lngunempave | gdpave | gdp2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Belgium | 1.94 | 2.67 | 1.01 | 2.22 | 0.12 | 0.27 | 61.4 | 7.9 | -0.5 | 4.0 | 26,660 | -3.6 |
| Denmark | 1.53 | 1.79 | 1.25 | 2.09 | 0.28 | 0.46 | 76.8 | 4.3 | -0.5 | 0.8 | 34,660 | -4.7 |
| Finland | 2.38 | 2.17 | 0.72 | 1.76 | 0.09 | 0.22 | 69.3 | 7.6 | -0.5 | 1.8 | 29,820 | -7.3 |
| France | 2.60 | 3.50 | 0.69 | 1.48 | 0.08 | 0.16 | 64.1 | 8.8 | -0.6 | 3.6 | 25,280 | -2.6 |
| Germany | 2.85 | 1.96 | 0.63 | 2.10 | 0.07 | 0.22 | 67.7 | 9.2 | -1.1 | 5.0 | 26,760 | -4.7 |
| Greece | 2.28 | 3.54 | 0.11 | 0.39 | 0.01 | 0.04 | 60.8 | 9.1 | -0.6 | 4.6 | 16,100 | -1.5 |
| Netherlands | 2.73 | 1.42 | 0.78 | 1.80 | 0.19 | 0.44 | 74.8 | 3.8 | -0.4 | 1.5 | 28,540 | -4.9 |
| Portugal | 3.51 | 2.54 | 0.48 | 1.22 | 0.06 | 0.16 | 67.8 | 7.6 | -0.4 | 3.6 | 12,220 | -3.1 |
| Spain | 2.38 | 3.83 | 0.60 | 1.46 | 0.06 | 0.16 | 63.8 | 9.6 | 3.0 | 2.2 | 17,360 | -4.9 |
| Sweden | 2.72 | 0.71 | 1.02 | 1.02 | 0.14 | 0.14 | 73.2 | 7.0 | 0.0 | 1.1 | 34,280 | -5.0 |
| United Kingdom | 1.17 | 0.29 | 0.05 | 0.18 | 0.01 | 0.03 | 71.6 | 5.2 | 0.3 | 1.2 | 30,660 | -5.2 |
| Bulgaria | | | 0.40 | 0.20 | 0.04 | 0.02 | 58.9 | 8.7 | -1.3 | 5.0 | 2,560 | -5.4 |
| Cyprus | | | 0.07 | 0.57 | 0.02 | 0.12 | 69.8 | 4.4 | -0.4 | 0.9 | 16,300 | -1.7 |
| Czech Republic | 3.00 | 1.71 | 0.13 | 0.23 | 0.02 | 0.03 | 65.4 | 6.6 | -0.9 | 3.5 | 7,800 | -5.5 |
| Estonia | 2.27 | 2.17 | 0.04 | 0.12 | 0.01 | 0.02 | 66.9 | 6.7 | 0.8 | 3.2 | 7,240 | -13.6 |
| Hungary | 1.82 | 2.08 | 0.20 | 0.37 | 0.03 | 0.05 | 57.0 | 7.2 | 0.4 | 3.3 | 6,440 | -6.4 |
| Latvia | | | 0.12 | 0.33 | 0.02 | 0.04 | 65.8 | 7.9 | 1.5 | 2.9 | 6,080 | -17.6 |
| Poland | 2.01 | 2.33 | 0.37 | 0.69 | 0.02 | 0.05 | 55.0 | 13.5 | -2.5 | 7.1 | 6,340 | 1.2 |
| Romania | | | 0.10 | 0.35 | 0.01 | 0.05 | 58.4 | 7.0 | -0.6 | 3.7 | 2,800 | -7.8 |
| Slovakia | 2.45 | 1.17 | 0.12 | 0.33 | 0.01 | 0.02 | 59.4 | 13.7 | -1.6 | 9.7 | 5,960 | -5.9 |
| Slovenia | 2.98 | 2.50 | 0.16 | 0.36 | 0.03 | 0.06 | 66.9 | 5.6 | -0.5 | 2.7 | 13,880 | -7.0 |
| Norway | 2.20 | 3.00 | 0.54 | 0.65 | 0.15 | 0.18 | 76.0 | 3.4 | 0.0 | 0.6 | 44,680 | -3.2 |

## Appendix 3: Correlation of country level variables

| | plmpun~p | almpun~p | EPL | EPLreg | EPLtemp | unempave | empave | unempc~e | lngune~e | gdpgro~h |
|---|---|---|---|---|---|---|---|---|---|---|
| PLMP% of GDP / unemp | 1.00 | | | | | | | | | |
| ALMP% of GDP / unemp | 0.91 | 1.00 | | | | | | | | |
| EPL overall | 0.02 | -0.21 | 1.00 | | | | | | | |
| EPL regular | 0.04 | -0.09 | 0.60 | 1.00 | | | | | | |
| EPL temporary | -0.01 | -0.22 | 0.90 | 0.24 | 1.00 | | | | | |
| Unemployment rate ave | -0.41 | -0.56 | 0.34 | 0.18 | 0.24 | 1.00 | | | | |
| Employment rate ave | 0.58 | 0.72 | -0.38 | -0.04 | -0.39 | -0.78 | 1.00 | | | |
| change in unemployment rate | 0.00 | 0.00 | 0.14 | -0.13 | 0.27 | -0.23 | 0.20 | 1.00 | | |
| long term unemployment rate ave | -0.40 | -0.52 | 0.26 | 0.22 | 0.12 | 0.86 | -0.77 | -0.51 | 1.00 | |
| GDP growth ave. | -0.52 | -0.51 | 0.04 | 0.11 | -0.07 | 0.52 | -0.62 | -0.49 | 0.71 | 1.00 |
| GDP growth 2009 | 0.16 | 0.15 | 0.26 | -0.02 | 0.30 | 0.13 | -0.09 | -0.41 | 0.12 | -0.10 |

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